

MICHIGAN ENVIRONMENTAL SCIENCE BOARD  
CHLORINE PANEL

MEETING SUMMARY  
TUESDAY, NOVEMBER 30, 1993  
ROOM A271, PLANT AND SOIL SCIENCE BUILDING  
MICHIGAN STATE UNIVERSITY  
EAST LANSING, MI

BOARD MEMBERS PRESENT:

Dr. Lawrence Fischer, Chair  
Dr. Richard Cook  
Dr. Bette Premo  
Dr. Eileen van Ravenswaay

BOARD MEMBERS ABSENT:

None

BOARD STAFF PRESENT:

Mr. Keith Harrison, Executive Director  
Ms. Shirley Willis, Administrative Officer

I. CALL TO ORDER

Dr. Lawrence Fischer, Chair, called the meeting of the Michigan Environmental Science Board Chlorine Panel to order at 2:05 p.m.

II. EXECUTIVE DIRECTOR'S REPORT

Mr. Keith Harrison indicated that the Board had received a request from Governor John Engler on November 18, 1993 to respond to a concern regarding chlorine. As a consequence and after consultation with Dr. Fischer, a Panel consisting of Drs. Lawrence Fischer, Richard Cook, Bette Premo and Eileen van Ravenswaay was created to address the Governor's concern. Upon receipt of the Governor's letter, background materials on the topic were gathered and sent to each of the Panel members. An additional handout, Amato, 1993 (The Crusade Against Chlorine) was distributed during the meeting.

III. GOVERNOR'S CHARGE TO THE PANEL

Dr. Fischer stated that the Governor had requested that the Panel evaluate the uses and concerns about chlorine and chlorinated compounds in Michigan in order to provide guidance to state policy makers (see Attachment 1). Two specific tasks are to be addressed by the Panel:

- (a) An evaluation of the scientific basis for the International Joint Commission's (IJC) recommendations on chlorine and chlorinated compounds, and
- (b) An evaluation of the effectiveness of Michigan's current regulation's on chlorine and chlorinated compounds to protect public health and the environment.

The report is to be completed by March 15, 1994.

Dr. Fischer summarized the issue regarding the Governor's first charge. He stated that the IJC has identified persistent chlorinated compounds as a threat to the environment and has called for their virtual elimination. The manner in which the IJC proposes this to be done is through the virtual elimination of chlorine. In opposition to this, the chlorine industry has indicated that the cost associated with such an action would be tremendously expensive and unnecessary since not all chlorine-containing compounds are toxic. As an alternative, the chlorine industry has proposed that only the toxic persistent compounds be addressed. There does not appear to be any disagreement between the two sides regarding the threat of toxic persistent chlorinated compounds to public health or the environment.

#### IV. PANEL MEMBERS ASSIGNMENTS

Dr. Fischer made the following general assignments for the Panel members:

Dr. Cook:	Chemistry issues
Dr. Premo:	Environmental and wildlife concerns including an indication of the persistency of the different types of chlorinated compounds
Dr. van Ravenswaay:	Economic concerns including an evaluation of the economic values and the assumptions used to develop them
Mr. Harrison:	State and federal regulatory issues
Dr. Fischer:	Mammalian and Human toxicity concerns

Each Panel member was requested to review pertinent, well-documented and referenced literature per their assigned areas and report their findings at the January Panel meeting.

Dr. Premo stated that of all the material provided to date, two articles, Muir et al., 1993 (Case Study, Application of a Virtual Elimination Strategy to an Industrial Feedstock Chemical-Chlorine) and Willes et al., 1993 (Scientific Principles for Evaluating the Potential for Adverse Effects from Chlorinated Organic Chemicals in the Environment), best summarize the issues currently before the Panel. She suggested that in addition to the literature, the Panel should also seek the assistance from some outside experts to expedite its work. Dr. John Giesey of Michigan State University, was suggested as such an expert. It was agreed that the Panel should identify eminent individuals in the field for possible assistance with their assignments.

Dr. Cook indicated that the organic-chlorine issue before the Panel was exceedingly complex and one in which hundreds of papers on the chemistry, toxicology and environmental fate have been published. He felt that an exhaustive review of all the literature would not be as productive as it was for the mercury investigation. He suggested that the Panel identify and concentrate on the work of a small number of respected and trusted scientists who have been employed in the area and draw upon their expertise as best they can. This information could then be supplemented with additional literature that the Panel members come across during their more general literature review.

Dr. Fischer indicated that in addition to his looking at the mammalian toxicity, he also wanted to look at the toxicology of chlorinated compounds in order to determine whether the only real problem chemicals are the persistent ones; whether they represent the major risk or whether, in fact, there is some risk dealing with the less persistent, non-accumulative chlorinated chemicals. Finally, he also wanted to determine if the toxicity is predictable from one chlorinated compound to another.

Dr. Fischer suggested that, as the Panel members research their assignments, they should also note any proposed substitutes and/or alternatives to the use of chlorinated products that they encounter in the literature.

Mr. Harrison indicated that the Departments of Agriculture, Natural Resources and Public Health have been asked to provide him with a list of state regulations which regulate the use of chlorine or chlorinated products. In addition, and where available, they have also been requested to provide any evaluations that they may have conducted regarding the effectiveness of such regulations to protect the environment and public health. Finally, and in response to a concern raised by Dr. van Ravenswaay, Mr. Harrison indicated that the regulation gathering would also be expanded to include a similar request from the federal government's counterpart agencies.

Dr. Fisher indicated that the Panel needed to reach a consensus as to the definition it would use for the IJC phrase "virtual elimination". After considerable discussion among the Panel members and the audience, it was decided that, at least for now, the Panel

would define the phrase "virtual elimination" as it relates the Governor's charge to mean the elimination of all anthropogenic inputs of chlorine into the environment. Mr. Harrison was requested to follow up with the IJC to determine if it had further defined the phrase to mean something different from what the Panel decided on.

Dr. Premo asked if it would be useful to attempt to untangle the beliefs environmentalists and industry have in common about persistent toxics. The general consensus of the Panel was that both sides would agree to the environmental and public health concerns of persistent toxics. The difference would be in how each side would propose to address the concerns. The proponents of chlorine chemistry would argue that each individual chemical compound needs to be proven harmful before it can be eliminated. The opponents would call for the elimination of the chemical compound until it can be proven that it is not harmful. Compounding both arguments would be science's inability to determine exactly the level of risk or harm proposed by all the various compounds.

Dr. Premo indicated that the Panel should also be cognizant during its deliberations regarding the best or most effective way to regulate the chlorinated compounds, as individual compounds or total organic chelates. Both strategies have some inherent advantages and disadvantages.

## V. PUBLIC COMMENT

In addition to the various comments made by the audience, Ms. Tracey Easthope asked how to submit information to the Panel. Mr. Harrison indicated that information should be sent to him (MESB, Lewis Cass Building, P.O. Box 30026, Lansing, Michigan 48909) and he would distribute it to the Panel members.

Ms. Easthope also inquired about the Panel's process for draft papers and making final decisions. Dr. Fischer stated that each Panel member is assigned an area to study and to prepare a working draft of their findings. The Panel will then meet one or more times to present and discuss each of the draft reports. Once the Panel reaches a reasonable consensus on the data and conclusions which are to be incorporated, a final document is then prepared and presented to the Governor.

The MESB, and therefore the Chlorine Panel, operates under the state's Open Meetings Act. The public is encouraged to submit information for the Panel's review. The Panel is required to present its scientific opinion based on factual data which it has reviewed. Therefore, anyone wishing to provide information on the topic under investigation should also provide the Panel with appropriate supporting data.

Ms. Easthope asked about data from preeminent scientists. Mr. Harrison responded that the Panel is looking for this type of information. He indicated that the information may be presented to the Panel by the scientist, discussed directly with a Panel member, or submitted to him for distribution to the Panel members.

Dr. Fischer added that the Panel would be interested in hearing short presentations at meetings, provided that written material accompanies the presentation. The Panel prefers written presentations in order allow time to read and digest the information.

#### VII. NEXT MEETING

Dr. Fischer requested that the next meeting should take place sometime in early January. Mr. Harrison indicated that his office would coordinate schedules and arrange for the meeting.

[The January meeting was subsequently scheduled for Tuesday, January 18, 1994 at 1:00 p.m., same location].

#### VIII. ADJOURNMENT

The meeting was adjourned at 4:00 p.m.

Keith G. Harrison, M.A., R.S., Cert. Ecol.  
Executive Director